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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

| | Application No. | Applicant(s) |
|---|---|---|
| **Office Action Summary** | 10/675,677 | GROSBACH ET AL. |
| | Examiner | Art Unit | |
| | Ian N. Moore | 2616 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on <u>30 September 2003</u>.

2a)☐ This action is **FINAL**.  2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) <u>1-18</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-18</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>30 September 2003</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All  b)☐ Some * c)☐ None of:

        1.☐ Certified copies of the priority documents have been received.

        2.☐ Certified copies of the priority documents have been received in Application No. _____.

        3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date <u>1-24-2005</u>.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

# DETAILED ACTION

## *Specification*

1.      The abstract of the disclosure is objected to because it contains the phrase, "**invention**" in

line 1, which can be implied. Thus, it is suggested to remove the implied word "of the

invention". Correction is required.  See MPEP § 608.01(b).

> It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

2.      The disclosure is objected to because of the following informalities:

The specification recites, "**related to U.S. Patent Application Serial No.____, filed**

**_____ and titled "Hierarchical Scheduling" (attorney docket number**

**ROC920030061US1)**" in page 1, lines 9-12, page 9, lines 19-20, page 10, line 12-16,30-31; page

26, line 19-21; page 27, line 4-5; and page 29, line 12-14. It is suggested to provide the missing

U.S. application serial number and filing date.

Appropriate correction is required.

## *Claim Objections*

3.      Claim 2, 6,8,10-14 and 17-18 are objected to because of the following informalities:

**Claim 2** recites "**the** highest priority calendar" in line 4.  Since "the highest priority

calendar" is recited for the first time in the claim, it is suggested to change "the highest priority

calendar" to "**a highest priority calendar**".

**Claim 6** recites "**the** pipe queue" in line 4.  Since "the pipe queue" is recited for the first

time in the claim, it is suggested to change "the pipe queue" to "**a pipe queue**".

**Claim 10** is also objected for the same reason as set forth above in claim 6 above.

**Claim 6** recites "**the** wining pipe" in line 4-5. For consistency and clarification with "the first winning entry indicating a first pipe" recited in claim 1, line 3-4, it is suggested to change "the wining pipe" in line 4-5, to "the **first** wining pipe".

**Claim 9** recites "**a calendar of a low priority**" in line 4. For consistency and clarification with "a calendar of a low priority" recited in claim 8, line 4, it is suggested to change "a calendar of a low priority" in line 4, to "**the** calendar of **the** low priority".

**Claim 11** recites "**the** highest priority pipe flow" in line 3. Since "the highest priority pipe flow" is recited for the first time in the claim, it is suggested to change "**the** highest priority pipe flow" to "**a** highest priority pipe flow".

**Claim 11** recites "**the queue**" in line 4. For consistency and clarification with "a pipe queue" recited in claim 10, line 3, it is suggested to change "the queue" in line 4, to "**the** pipe queue".

**Claim 11** recites "**the** longest time" in line 4. Since "the longest time" is recited for the first time in the claim, it is suggested to change "**the** longest time" to "**the** longest time".

**Claim 12** recites the clause the optional language "**adapted to**" in lines 2 and 6. In order to present the claim in a better form and to describe a positive or require steps/function to be performing (i.e. using the claim language that does not suggest or make optionally but required steps to be performed), applicant is suggested to revise the claim language such that the steps/functions, which follows "adapted to", to be performed are required (not optional).

**Claims 17 and 18** are also objected for the same reason as set forth above in claim 12 above.

**Claim 13** recites "a plurality of main calendars" in line 3. For consistency and clarification with "a plurality of main calendars" recited in claim 1, line 8, it is suggested to change "a plurality of main calendars" in line 3, to "the plurality of main calendars".

**Claim 13** recites " an autonomous flow" in line 4. For consistency and clarification with "autonomous flow" recited in claim 12, line 15, it is suggested to change "an autonomous flow" in line 4, to "the autonomous flow".

**Claim 14** recites " an autonomous flow" in lines 4 and 7. For consistency and clarification with "autonomous flow" recited in claim 12, line 15, it is suggested to change "an autonomous flow" in lines 4 and 7, to "the autonomous flow".

**Claim 14** recites, "pipe flow" in line 4 and "a pipe flow" in line 7. For consistency and clarification with "pipe flow" recited in claim 12, line 18, it is suggested to change both "pipe flow" and "a pipe flow" in lines 4 and 7, to "the pipe flow".

**Claim 8** is also objected since they are depended upon objected claims 2 as set forth above.

Appropriate corrections are required.


### Claim Rejections - 35 USC § 102

4.      The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5.      Claims 1-12, and 14-18 are rejected under 35 U.S.C. 102(b) as being anticipated by Pei

(US006272109B1).

**Regarding Claim 1**, Pei discloses a method (see FIG. 1A-B, 2-4, data communication

system UNI 10 processing the method) comprising:

selecting a first winning entry (see FIG. 5, identify/select a first content/entry) from one

of a plurality of main calendars (see FIG. 5, from lists in the schedule table) during a time unit

(see FIG. 5, during a time), the first winning entry indicating a first pipe (see FIG. 5,

identify/selected a first VPC) to be serviced during the time unit (see FIG. 5, a first content/entry

to be serviced identifies a first VPC to be serviced during a time; see FIG. 1A, Method S1-S3;

see col. 5, line 14-30; see col. 10, line 64 to col. 11, line 16, 45-60; see col. 12, line 30-40);

determining that no pipe flow corresponding to the winning first pipe currently needs to

be serviced during the time unit (see FIG. 1A, S3, S5, S11; when there is no cell ready to send

for HP VCC (e.g. CBR/VBR) associated with this VPC during the transmit time; see col. 5, line

33-34, see col. 6, line 7-11; see col. 11, line 13-16);

selecting a second winning entry (see FIG. 5, identify/select a second entry/content to be

serviced) from the plurality of main calendars during the time unit (see FIG. 5, from lists in the

schedule table during a time), the second winning entry indicating a second pipe (see FIG. 5,

identify/selected a second VPC) or autonomous flow (see FIG. 5, identify/selected

separate/independent/autonomous VCC associated with a first VPC) to be serviced during the

time unit (see FIG. 5, a second admission/entry identifies a second VPC or

separate/independent/autonomous VCC to be serviced during a time; see FIG. 1A-B, Method S5-

S9,S11,S13; when there is no cell ready to send in first VCC (e.g. CBR), the opportunity is

passed to high/low priority second VPC, or low priority separate/independent/autonomous VCC

of a first VPC; see col. 5, line 30 to col. 6, line 25; see col. 11, line 5-25);  and

    servicing the autonomous flow or pipe flow corresponding to the second winning entry

during the time unit (see FIG. 1B, S11, S13, S16; see FIG. 5; servicing high/low priority second

VPC, or low priority separate/independent/autonomous VCC of a first VPC; see col. 6, line 6-55;

see col. 11, line 5 to col. 12, line 65).

    **Regarding Claim 2**, Pei discloses selecting the first winning entry from the highest

priority calendar that indicates an entry that needs to be serviced (see FIG. 1A-B, 5, S3-S4, S7,

S11, S12, selecting/identifying a first admission/entry to serviced from the HP VPCs that

indicates that VCC entry that requires priority serving (e.g. CBR); see col. 5, line 14-30; see col.

10, line 64 to col. 11, line 16, 45-60; see col. 12, line 30-40).

    **Regarding Claim 3**, Pei discloses the first winning entry includes a first entry of a chain

(see FIG. 5, VP1, VC1 is the first entry of table/chain to be serviced), the chain includes a

plurality of pipe entries (see FIG. 5, VP0-VP3) scheduled to be serviced during the time unit (see

FIG. 5, Table/chain includes VP0-VP3 scheduled to be serviced during the time).

    **Regarding Claim 4**, Pei discloses wherein selecting the first winning entry from one of

the plurality of main calendars during the time unit includes selecting the first winning entry

from one of the plurality of main calendars, each of which is of the different priority, during the

time unit (see FIG. 5, identifying/selecting a first entry/admission to be serviced from one of low

priority list or high priority list during the time); see col. 5, line 14-30; see col. 10, line 64 to col.

11, line 16, 45-60; see col. 12, line 30-40.

**Regarding Claim 5**, Pei discloses wherein selecting the first winning entry from one of the plurality of main calendars during the time unit includes, selecting the first winning entry from one of the plurality of main calendars during a plurality of clock cycles (see FIG. 4, data communication system UNI 10 utilizes clocking (TCTL_CLK and RCTL_CLK) performs processing within clock boundaries, and thus it is clear that the identifying/selecting a first entry/admission to be serviced from one of the list/column in a schedule table is performed during a plurality of clock cycles of clock boundaries; col. 8, line 50-60; see col. 9, line 54-69).

**Regarding Claim 6**, Pei discloses wherein determining that no pipe flow corresponding to the winning first pipe currently needs to be serviced during the time unit includes, accessing the pipe queue corresponding with the winning pipe for pipe flows that need to be serviced (see FIG. 3, memory 29 comprising queues storing VPC and VCC information for CBR, VBR, ABR and UBR traffic, and the scheduler lookups/access the queue associated with a identified VPC its VCC that needs to be serviced; see col. 7, line 50-57; see col. 9, line 25-30,43-50; see col. 11, line 15-22) and determining that no pipe flow corresponding to the winning first pipe entry currently needs to be serviced during the time unit (see FIG. 1A, S3,S5, S11; when there is no cell ready to send for identified/selected VPC with its VCC (e.g. CBR/VBR) during the transmit time; see col. 5, line 33-34, see col. 6, line 7-11; see col. 11, line 13-16).

**Regarding Claim 7**, Pei discloses electing the second winning entry from one of the plurality of main calendars during the time unit includes selecting a second entry of the chain (see FIG. 1A-B, 5, identifying/selecting a second entry/admission to be serviced from the second entry/admission of the list/table (e.g. VP2, VC3); see col. 5, line 30 to col. 6, line 25; see col. 11, line 5-25).

**Regarding Claim 8**, Pei discloses selecting the second winning entry from a calendar of a lower priority than the highest priority calendar (see FIG. 1A-B, 5, identifying/selecting a second entry/admission to be serviced from the entries/lists of low priority than high priority; see col. 5, line 30 to col. 6, line 25; see col. 11, line 5-25).

**Regarding Claim 9**, Pei discloses selecting the second winning entry from the highest priority calendar that has an entry indicating a pipe or autonomous flow to be serviced during the time unit (see FIG. 5, identifying/selecting a second entry/admission to be serviced from the entries/lists of high priority of a second VPC (e.g. VP3 VC2) (e.g. another CBR/VBR), or separate/independent/autonomous VCC of a first VPC (e.g. VBR); see col. 5, line 30 to col. 6, line 25; see col. 11, line 5-25).

**Regarding Claim 10**, Pei discloses wherein servicing the autonomous flow or pipe flow corresponding to the second winning entry during the time unit includes, accessing the pipe queue corresponding to the second winning entry to select a pipe flow that needs to be serviced (see FIG. 3, memory 29 comprising queues storing VPC and VCC information for CBR, VBR, ABR and UBR traffic, and the scheduler lookups/access the queue associated with a identified second entry/entrance to identify/select a second VCC that needs to be serviced; see col. 7, line 50-57; see col. 9, line 25-30,43-50; see col. 11, line 15-22; see col. 6, line 6-55; see col. 11, line 5 to col. 12, line 65).

**Regarding Claim 11**, Pei discloses servicing the autonomous flow or pipe flow corresponding to the second winning entry during the time unit includes, servicing the highest priority pipe flow that is in the queue the longest time (see FIG. 4-5,6, when selected VCC has

no cell ready to transmit, the scheduler looks to a queue of VCCs to fetch a VCC at the head of

the queue (i.e. the longest time in the queue); see col. 16, line 55-63).

**Regarding Claim 12**, Pei discloses a network processor system (see FIG. 2-4, data

communication system UNI 10) comprising:

at least one memory (see FIG. 2, memory 29) adapted to store one or more quality of

service priority parameters (see col. 9, line 35-53; storing traffic priority tables) corresponding to

one or more pipes (see FIG. 5, Virtual Path Connection (VPC)) and pipe flows (see FIG. 5,

Virtual Circuit Connection (VCC) flows/connections with different priorities; see col. 9, line 20-

30,45-50; see col. 10, line 65-67); and

scheduler logic (see FIG. 2, ATM segmentation and Reassembly CKT 23 with scheduling

means (see FIG. 4)), coupled to the at least one memory (see FIG. 2, connects to memory 29);

see col. 7, line 50-56, adapted to:

select a first winning entry (see FIG. 5, identify/select a first content/entry) from one of a

plurality of main calendars (see FIG. 5, from lists in the schedule table) during a time unit (see

FIG. 5, during a time), the first winning entry indicating a first pipe (see FIG. 5, identify/selected

a first VPC) to be serviced during the time unit (see FIG. 5, a first content/entry to be serviced

identifies a first VPC to be serviced during a time; see FIG. 1A, Method S1-S3; see col. 5, line

14-30; see col. 10, line 64 to col. 11, line 16, 45-60; see col. 12, line 30-40);

determine that no pipe flow corresponding to the winning first pipe currently needs to be

serviced during the time unit (see FIG. 1A, S3, S5, S11; when there is no cell ready to send for

HP VCC (e.g. CBR/VBR) associated with this VPC during the transmit time; see col. 5, line 33-

34, see col. 6, line 7-11; see col. 11, line 13-16);

select a second winning entry (see FIG. 5, identify/select a second entry/content to be

serviced) from the plurality of main calendars during the time unit (see FIG. 5, from lists in the

schedule table during a time), the second winning entry indicating a second pipe (see FIG. 5,

identify/selected a second VPC) or autonomous flow (see FIG. 5, identify/selected

separate/independent/autonomous VCC associated with a first VPC) to be serviced during the

time unit (see FIG. 5, a second admission/entry identifies a second VPC or

separate/independent/autonomous VCC to be serviced during a time; see FIG. 1A-B, Method S5-

S9,S11,S13; when there is no cell ready to send in first VCC (e.g. CBR), the opportunity is

passed to high/low priority second VPC, or low priority separate/independent/autonomous VCC

of a first VPC; see col. 5, line 30 to col. 6, line 25; see col. 11, line 5-25);  and

service the autonomous flow or pipe flow corresponding to the second winning entry

during the time unit (see FIG. 1B, S11, S13, S16; see FIG. 5; servicing high/low priority second

VPC, or low priority separate/independent/autonomous VCC of a first VPC; see col. 6, line 6-55;

see col. 11, line 5 to col. 12, line 65).

**Regarding Claim 14**, Pei discloses enqueue and new attach logic for scheduling at least

one of an autonomous flow and pipe flow to be serviced (see col. 5, line 5-30; see col. 7, line 50-

57; see col. 9, line 25-30,43-65; see col. 11, line 15-22; see col. 16, line 50-62; Memory 29

comprising queues and buffers, and thus it is clear that queues/buffers perform

enqueing/entering; the ATM segmentation and Reassembly CKT 23 with scheduling means/logic

schedules the VCC to be served); and

dequeue and reattach logic for selecting at least one of an autonomous flow and a pipe

flow to be serviced (see col. 5, line 5-30; see col. 7, line 50-57; see col. 9, line 25-30,43-65; see

col. 11, line 15-22; see col. 16, line 50-62; Memory 29 comprising queues and buffers, and thus

it is clear that queues/buffers performs dequeuing/exiting; the ATM segmentation and

Reassembly CKT 23 with scheduling means/logic identifies/selects the VCC to be served from

the head of the queue).

**Regarding Claim 15**, Pei discloses a method steps (see FIG. 1A-B, 2-4, data

communication system UNI 10 processing the method steps) comprising:

selecting a first winning entry (see FIG. 5, identify/select a first content/entry) from one

of a plurality of main calendars (see FIG. 5, from lists in the schedule table) during a time unit

(see FIG. 5, during a time), the first winning entry indicating a first pipe (see FIG. 5,

identify/selected a first VPC) to be serviced during the time unit (see FIG. 5, a first content/entry

to be service identifies a first VPC to be serviced during a time; see FIG. 1A, Method S1-S3; see

col. 5, line 14-30; see col. 10, line 64 to col. 11, line 16, 45-60; see col. 12, line 30-40);

determining that no pipe flow corresponding to the winning first pipe currently needs to

be serviced during the time unit (see FIG. 1A, S3, S5, S11; when there is no cell ready to send

for HP VCC (e.g. CBR/VBR) associated with this VPC during the transmit time; see col. 5, line

33-34, see col. 6, line 7-11; see col. 11, line 13-16);

selecting a second winning entry (see FIG. 5, identify/select a second entry/content to be

serviced) from the plurality of main calendars during the time unit (see FIG. 5, from lists in the

schedule table during a time), the second winning entry indicating a second pipe (see FIG. 5,

identify/selected a second VPC) to be serviced during the time unit (see FIG. 5, a second

admission/entry identifies a second VPC to be serviced during a time; see FIG. 1A-B, Method

S5-S9, S11, S13; when there is no cell ready to send in first VCC (e.g. CBR), the opportunity is

passed to high/low priority second VPC; see col. 5, line 30 to col. 6, line 25; see col. 11, line 5-25); and

servicing a pipe flow corresponding to the second winning entry during the time unit (see FIG. 1B, S11, S13, S16; see FIG. 5; servicing high/low priority second VPC; see col. 6, line 6-55; see col. 11, line 5 to col. 12, line 65).

**Regarding Claim 16**, Pei discloses a method (see FIG. 1A-B, 2-4, data communication system UNI 10 processing the method) comprising:

selecting a first winning entry (see FIG. 5, identify/select a first content/entry to be serviced) from one of a plurality of main calendars (see FIG. 5, from lists in a schedule table) during a time unit (see FIG. 5, during a time), the first winning entry indicating a first pipe (see FIG. 5, identify/selected a first VPC) to be serviced during the time unit (see FIG. 5, a first admission/content to be service identifies a first VPC to be serviced during a time; see FIG. 1A, Method S1-S3; see col. 5, line 14-30; see col. 10, line 64 to col. 11, line 16, 45-60; see col. 12, line 30-40);

determining that no pipe flow corresponding to the winning first pipe currently needs to be serviced during the time unit (see FIG. 1A, S3, S5, S11; when there is no cell ready to send for HP VCC (e.g. CBR/VBR) associated with this VPC during the transmit time; see col. 5, line 33-34, see col. 6, line 7-11; see col. 11, line 13-16);

selecting a second winning entry (see FIG. 5, identify/select a second entry/content to be serviced) from the plurality of main calendars (see FIG. 5, from lists in a schedule table) during the time unit (see FIG. 5, during a time), the second winning entry indicating autonomous flow (see FIG. 5, identify/selected separate/independent/autonomous VCC associated with a first

VPC) to be serviced during the time unit (see FIG. 5, a second content/entry identifies a

separate/independent/autonomous VCC to be serviced during a time; see FIG. 1A-B, Method S5-

S9,S11,S13; when there is no cell ready to send in first VCC (e.g. CBR), the opportunity is

passed to a low priority separate/independent/autonomous VCC of a first VPC; see col. 5, line 30

to col. 6, line 25; see col. 11, line 5-25);  and

servicing the autonomous flow or pipe flow corresponding to the second winning entry

during the time unit (see FIG. 1B, S11, S13, S16; see FIG. 5; low priority

separate/independent/autonomous VCC of a first VPC; see col. 6, line 6-55; see col. 11, line 5 to

col. 12, line 65).

**Regarding Claim 17**, Pei discloses a network processor system (see FIG. 2-4, data

communication system UNI 10) comprising:

at least one memory (see FIG. 2, memory 29) adapted to store one or more quality of

service priority parameters (see col. 9, line 35-53; storing traffic priority tables) corresponding to

one or more pipes (see FIG. 5, Virtual Path Connection (VPC)) and pipe flows (see FIG. 5,

Virtual Circuit Connection (VCC) flows/connections with different priorities; see col. 9, line 20-

30,45-50; see col. 10, line 65-67); and

Scheduler logic (see FIG. 2, ATM segmentation and Reassembly CKT 23 with

scheduling means (see FIG. 4)), coupled to the at least one memory (see FIG. 2, connects to

memory 29); see col. 7, line 50-56, adapted to:

select a first winning entry (see FIG. 5, identify/select a first content/entry) from one of a

plurality of main calendars (see FIG. 5, from lists in the schedule table) during a time unit (see

FIG. 5, during a time), the first winning entry indicating a first pipe (see FIG. 5, identify/selected

a first VPC) to be serviced during the time unit (see FIG. 5, a first content/entry to be service

identifies a first VPC to be serviced during a time; see FIG. 1A, Method S1-S3; see col. 5, line

14-30; see col. 10, line 64 to col. 11, line 16, 45-60; see col. 12, line 30-40);

determine that no pipe flow corresponding to the winning first pipe currently needs to be

serviced during the time unit (see FIG. 1A, S3, S5, S11; when there is no cell ready to send for

HP VCC (e.g. CBR/VBR) associated with this VPC during the transmit time; see col. 5, line 33-

34, see col. 6, line 7-11; see col. 11, line 13-16);

select a second winning entry (see FIG. 5, identify/select a second entry/content to be

serviced) from the plurality of main calendars during the time unit (see FIG. 5, from lists in the

schedule table during a time), the second winning entry indicating a second pipe (see FIG. 5,

identify/selected a second VPC) to be serviced during the time unit (see FIG. 5, a second

admission/entry identifies a second VPC to be serviced during a time; see FIG. 1A-B, Method

S5-S9, S11, S13; when there is no cell ready to send in first VCC (e.g. CBR), the opportunity is

passed to high/low priority second VPC; see col. 5, line 30 to col. 6, line 25; see col. 11, line 5-

25); and

service a pipe flow corresponding to the second winning entry during the time unit (see

FIG. 1B, S11, S13, S16; see FIG. 5; servicing high/low priority second VPC; see col. 6, line 6-

55; see col. 11, line 5 to col. 12, line 65).

**Regarding Claim 18**, Pei discloses a network processor system (see FIG. 2-4, data

communication system UNI 10) comprising:

at least one memory (see FIG. 2, memory 29) adapted to store one or more quality of

service priority parameters (see col. 9, line 35-53; storing traffic priority tables) corresponding to

one or more pipes (see FIG. 5, Virtual Path Connection (VPC)) and pipe flows (see FIG. 5,

Virtual Circuit Connection (VCC) flows/connections with different priorities; see col. 9, line 20-

30,45-50; see col. 10, line 65-67); and

scheduler logic (see FIG. 2, ATM segmentation and Reassembly CKT 23 with scheduling

means (see FIG. 4)), coupled to the at least one memory (see FIG. 2, connects to memory 29);

see col. 7, line 50-56, adapted to:

select a first winning entry (see FIG. 5, identify/select a first content/entry to be serviced)

from one of a plurality of main calendars (see FIG. 5, from lists in a schedule table) during a

time unit (see FIG. 5, during a time), the first winning entry indicating a first pipe (see FIG. 5,

identify/selected a first VPC) to be serviced during the time unit (see FIG. 5, a first

admission/content to be service identifies a first VPC to be serviced during a time; see FIG. 1A,

Method S1-S3; see col. 5, line 14-30; see col. 10, line 64 to col. 11, line 16, 45-60; see col. 12,

line 30-40);

determine that no pipe flow corresponding to the winning first pipe currently needs to be

serviced during the time unit (see FIG. 1A, S3, S5, S11; when there is no cell ready to send for

HP VCC (e.g. CBR/VBR) associated with this VPC during the transmit time; see col. 5, line 33-

34, see col. 6, line 7-11; see col. 11, line 13-16);

select a second winning entry (see FIG. 5, identify/select a second entry/content to be

serviced) from the plurality of main calendars (see FIG. 5, from lists in a schedule table) during

the time unit (see FIG. 5, during a time), the second winning entry indicating autonomous flow

(see FIG. 5, identify/selected separate/independent/autonomous VCC associated with a first

VPC) to be serviced during the time unit (see FIG. 5, a second content/entry identifies a

separate/independent/autonomous VCC to be serviced during a time; see FIG. 1A-B, Method S5-

S9,S11,S13; when there is no cell ready to send in first VCC (e.g. CBR), the opportunity is

passed to a low priority separate/independent/autonomous VCC of a first VPC; see col. 5, line 30

to col. 6, line 25; see col. 11, line 5-25); and

service the autonomous flow or pipe flow corresponding to the second winning entry

during the time unit (see FIG. 1B, S11, S13, S16; see FIG. 5; low priority

separate/independent/autonomous VCC of a first VPC; see col. 6, line 6-55; see col. 11, line 5 to

col. 12, line 65).

### Claim Rejections - 35 USC § 103

6.      The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

7.      Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pei in view of Li

(US006560230B1).

**Regarding Claim 13**, Pei discloses a plurality of main calendars (see FIG. 5, lists in the

schedule table) for storing at least one of an autonomous flow and a pipe that are scheduled to be

serviced (see col. 5, line 30 to col. 6, line 25; see col. 9, line 20-30,45-50; see col. 10, line 65-67;

see col. 7, line 50-57; see col. 9, line 25-30,43-50; see col. 11, line 5-25; schedule table stores

<u>one</u> of separate/independent/autonomous VCC and VPC that is scheduled to be serviced);

a pipe queue table for storing a winning pipe flow in a queue for a pipe to which the pipe

flow corresponds (see FIG. 3, memory 29 comprising queues tables for storing VPC and VCC

information for CBR, VBR, ABR and UBR traffic in their respective queues, and the scheduler

lookups/access the queue associated with a identified VPC its VCC that needs to be serviced; see

col. 7, line 50-57; see col. 9, line 25-30,43-50; see col. 11, line 15-22).

Pei does not explicitly disclose a plurality of secondary calendars for storing pipe flows

that are scheduled to be serviced.

However, Li teaches a plurality of secondary calendars (see FIG. 5A, second group of

class/priority queues 56) for storing pipe flows that are scheduled to be serviced (see FIG. 5A,

storing traffic/flows that are scheduled to be serviced by scheduling engine 60; see col. 8, line 25

to col. 9, line 45); and

a pipe queue table (see FIG. 5, 5A, memory/queue table 64) for storing a winning pipe

flow in a queue for a pipe to which the pipe flow corresponds (see FIG. 5,5A, memory/queue

table 64 stores a selected traffic/flow in a queue 55 for a selected class/priority to which

traffic/flow associated (e.g. best effort); see col. 8, line 25 to col. 9, line 45).

Therefore, it would have been obvious to one having ordinary skill in the art at the time

the invention was made to provide disclose a plurality of secondary calendars for storing pipe

flows that are scheduled to be serviced, as taught by Li in the system of Pei, so that it would

provide fast scheduling and forwarding; see Li col. 3, line 45-65.

*Conclusion*

8.      The prior art made of record and not relied upon is considered pertinent to applicant's

disclosure.

- **Chow (US006438134B1)** discloses a hierarchical scheduler serving multi-class digital communication system.

- **Ganmuki (US005850399A)** discloses a hierarchical scheduler with levels of schedulers for plurality of sessions having various quality of services requirements.

9.    Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ian N. Moore whose telephone number is 571-272-3085. The examiner can normally be reached on 9:00 AM- 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Doris To can be reached on 571-272-7629. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Ian N. Moore
Art Unit 2616